

MIDInet

NS-02-0190

Overview

MIDInet is a multiport MIDI routing and processing unit designed to interface with the Synclavier and Direct-to-Disk systems.

The MIDInet unit

The MIDInet unit is connected to the Synclavier and has 8 input and 8 output ports located at the rear of the unit to connect with MIDI devices. With MIDInet, the Synclavier or Direct-to-Disk can function as the master controlling device in any MIDI setup.

MIDInet receives MIDI data from the Synclavier, processes it, and sends the result to MIDI output ports. It can also receive data from MIDI input ports, process it and send it to the Synclavier and/or MIDI output ports.

A MIDInet window on the Macintosh terminal is used to control all routing and processing.

The MIDInet window

MIDInet is displayed in a separate **window** and has a set of **pulldown menus** that appear in the menu bar at the top of the screen when the module is active.

To open the MIDInet window, double click the **MIDInet icon** on the Finder. To change the size of the MIDInet window, drag its **Size box** (□). To toggle the window between full-screen size and its former size, click its **Zoom box** (□). To move the window on the screen, drag its **Title bar** to a new location.


When the MIDInet window is active, you can customize it for optimum use.

- Use the **Display Preferences** command from the **Special menu** (⌘D) to rearrange the window by selecting only the column headings and process block columns your setup requires.
- Adjust any column heading widths by dragging the vertical lines.
- Use the **Set Display Defaults** command from the **Special menu** to make the current display setup the default.

The pulldown menus are analogous to the menus in other Macintosh applications. To see the commands available on a pulldown menu, press and hold the large trackball button while the pointer is on the menu title. To select a command, drag the cursor down the menu and release the trackball button when the desired command is highlighted. If a menu command has a **key equivalent**, you can also select the command by just typing its key equivalent.

Overview (con't)

The MIDInet window (con't)

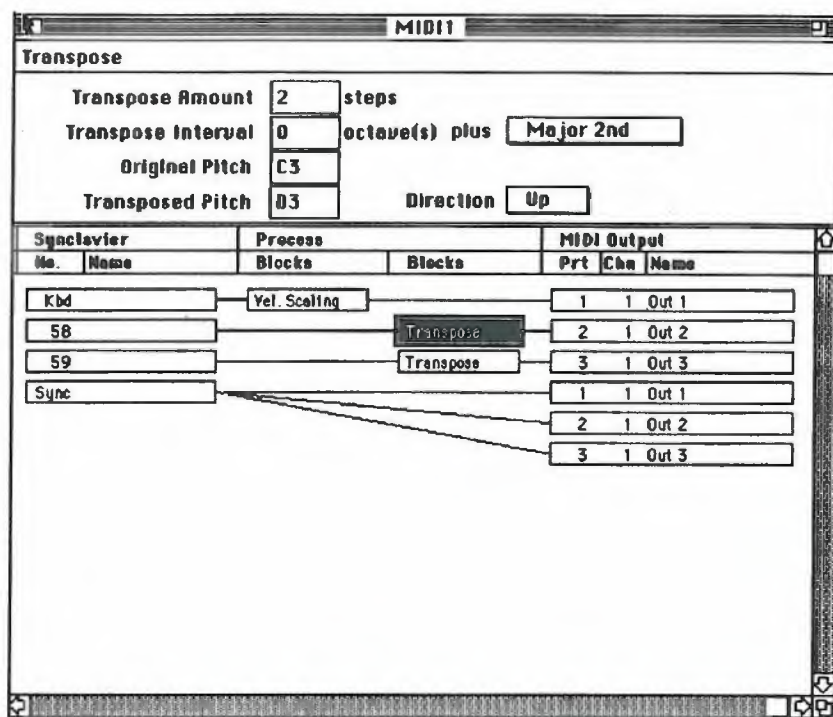
The MIDInet window displays and controls all MIDI signal routing and processing. A "MIDInet is active" icon () appears near the upper right hand corner of the window when the MIDInet hardware unit is connected and running.

The bottom portion of the MIDInet window is the **routing area**. When MIDInet is first opened, this area is blank, except for a rectangular **target block** in the upper left corner.

Blocks similar to the target block are created in the routing area for each **source**, **process** and **destination**. Routing of MIDI data is represented by lines that connect one block to another.

The **dialog area**, the upper portion of the MIDInet window, displays data about the currently selected block. This area is also used to **monitor** MIDI data received at a selected block.

MIDI data "flows" through MIDInet from left to right. When two or more routings connect to the left (input) side of a single block, the MIDI data from all paths is automatically merged. When two or more routings connect to the right (output) side of a single block, the MIDI data from the block is automatically duplicated and sent along all the paths.



In the illustration above, the Synclavier keyboard and sequencer tracks 58 and 59 are routed through process blocks to MIDI output ports 1-3. Synclavier synchronization signals are routed to the same output ports.

The dialog area shows the transpose dialog for the selected process block.

Unused elements of the display to the left of the Synclavier columns have been removed using the Display Preferences dialog from the Special menu.

Overview (con't)

MIDI routing

Create a separate **block** for each **input**, **process** and **output** by moving the target block and pressing Return. You can select a single block, a group of blocks or random blocks by clicking, dragging or Shift-clicking respectively.

To delete a selected block, press **Delete**, or use the **Cut** or **Clear** commands under the **Edit** menu or their keyboard equivalents.

MIDI routing is represented by lines drawn from left to right. You can connect existing blocks by dragging from the right side of one block to the other. You can create and route blocks simultaneously by dragging from the right side of any column or block to another column.

MIDI routing (con't)

Use the **Connect From (%F)** and **Connect To (%T)** commands from the **Edit** menu to connect a single source block to multiple destination blocks or multiple source blocks to a single destination block. Select the source block(s), followed by the **Connect From** command. Then select the destination block(s), and use the **Connect To** command. Complete the operation by selecting the **Connect From** command again.

The process for removing multiple connections is the same as the process for making them.

You can cut, copy and paste a single block or groups of blocks with their assignments and connections. You can also clear blocks without placing them on the clipboard. The **Cut**, **Copy**, **Paste** and **Clear** commands are on the **Edit** menu.

Overview (con't)

Synclavier tracks

Each Synclavier track must be assigned its own routing, and each track must have a timbre, even if it is an empty timbre.

MIDInet routing does not change when Synclavier track changes are made. For example, if you bounce track 3 to track 5, any MIDInet routing for track 3 remains on track 3. It is not bounced to track 5.

Similarly, when you record, any MIDInet routing set up for the Synclavier keyboard is not applied to the track selected automatically for recording.

MIDI assignments

When you select an input, output or Synclavier block, assignment fields appear in the dialog area. Pressing Tab moves a cursor from field to field for data entry.

Block	Fields and switches
Input/output	name, port and channel.
Synclavier	track number, name, timbre name. The Track Number field accepts a track number, K for keyboard or S for synchronization.

After you select a process block, pull down the **Process** menu to select a specific process. A dialog for that process appears in the dialog area with prompts for entering the appropriate parameters.

Detailed information about each MIDI process and its parameters is given in the MIDInet reference section.

MIDI Monitor

You can monitor incoming MIDI events by selecting **Monitor** from the **Special** menu or pressing ⌘R. In the dialog area, MIDI events entering the currently selected block are listed in the following format:

Note On	C3	Chn 01	Vel 127	
Note Off	C3	Chn 01	Vel 000	
Program Change	001			
Control Change	007	Chn 01	Val 064	Main Volume

The data displayed is always that which is **received** at the selected block location and not the output of the block. For example, if the selected block is a transpose block, the MIDI events are displayed before the transposition is applied. To see the results of the transposition, monitor the next block in the chain.

Up to eight events are displayed at one time; the window scrolls up to accommodate additional events.

So long as the monitor is active, you can freely move around the routing area and monitor activity at any location.

To turn off the monitor, select **Monitor** from the **Special** menu again.

Linking a sequence to a MIDInet file

When you save a Synclavier sequence, it is automatically linked to the current MIDInet file. If this file is untitled, a message asks you to name the MIDInet file before saving the sequence.

If a linked sequence is recalled with MIDInet running, a dialog gives you the opportunity to automatically recall the linked MIDInet file.

**MIDInet
reference**

Five pulldown menus and their commands are available in MIDInet. Each selection is described below.

File	
New	⌘N
Open...	⌘O
Merge...	⌘M
Save	⌘S
Save As...	
Save Selection	
Revert to Saved	
Delete...	
Close MIDInet™	
Quit	⌘Q

File menu

Menu item	Key equivalent	Function
New	⌘N	Opens a new untitled MIDInet window which replaces the current contents of the MIDInet window.
Open...	⌘O	Opens an already saved file which replaces the contents of the current MIDInet window.
Merge...	⌘M	Adds the contents of a MIDInet file to the current MIDInet window at the target block location.
Save	⌘S	Replaces an already saved file with the current version.
Save As...		Stores the current file on disk under a new name.
Save Selection...		Stores a selected part of the current file including assignments and connections.

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File menu (con't)

Menu item	Key equivalent	Function
Revert to Saved		Replaces the current MIDInet file version with the version stored on disk.
Delete...		Deletes the designated file.
Close MIDInet	⌘W	Closes the MIDInet module while remaining in the RTP.
Quit	⌘Q	Closes the MIDInet module and returns to Finder.

**MIDInet
reference
(con't)**

Edit	
Undo	⌘Z
Cut	⌘H
Copy	⌘C
Paste	⌘V
Clear	
Connect From	⌘F
Connect To	⌘T

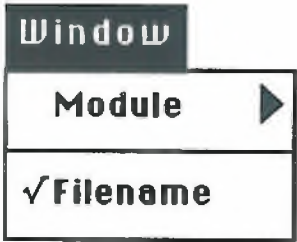
Edit menu

Menu item	Key equivalent	Function
Undo	⌘Z	Replaces current version of MIDInet file with last edited version. Use this command to toggle between the two most recent edited versions.
Cut	⌘X	Removes the selected block(s) along with their assignments and connections and places them on the clipboard.
Copy	⌘C	Copies the selected block(s) along with their assignments and connections onto the clipboard.
Paste	⌘V	Places cut or copied block(s) from the clipboard at the selected block or target block. Use the Paste command to transfer a selected part of one file to another.
Clear	⌘B	Removes the selected block(s) without putting them on the clipboard.

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Edit menu (con't)

Menu item	Key equivalent	Function
Connect From	⌘F	Designates block(s) from which a multiple connection is to be made. Also use to complete multiple routing.
Connect To	⌘T	Designates block(s) to which a multiple connection is to be made.



Window menu

Menu item	Function
Module	Lists available modules on pop-up menu. Select the desired module from menu.
✓ Filename	File currently displayed.

Process menu

Menu item	Function
Channel map	Changes any of the channels of a MIDI signal. Clear removes all "Mapped To" channel numbers; Reset returns mapping to the default settings.

Channel Map																
Original	1	2	3	4	5	6	7	8								
Mapped To	1	2	3	4	5	6	7	8								
Original	9	10	11	12	13	14	15	16								
Mapped To	9	10	11	12	13	14	15	16								
									Clear							
									Reset							

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Process

- Channel Map
- Controller Filter
- Controller Map
- Event Filter
- Pitch Filter
- Transpose
- Velocity Scaling

Process menu (con't)

Menu item	Function
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Controller Filter	Filters out selected MIDI controller data. Move the cursor across the segmented display to view MIDI controller names and click the desired segment. Invert filters out non-selected controller signals. Clear removes all filter selections.
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Controller: 2 Breath Controller

0 63

64 127

Clear

Invert

Controller map	Maps any controller input to any other controller. For Poly Pressure (individual), note designations are required. Channel Pressure and Pitch Bend (wheel) are mapped individually. All other controllers are mapped by selecting Control Change and entering the controller identification numbers. See the Controller Filter process dialog for these numbers.
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Controller Map

Map ☒ Poly Pressure

☐ Control Change

☐ Channel Pressure

☐ Pitch Bend

To ☒ Poly Pressure

☐ Control Change

☐ Channel Pressure

☐ Pitch Bend

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Process menu (con't)

Menu item	Function
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Event Filter	Filters out selected MIDI events. Click in any box to filter out that event. Set All selects all events; Clear removes all filter settings.
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Event filter	
<input type="checkbox"/> Note Off	<input type="checkbox"/> Pitch Bend Change
<input type="checkbox"/> Note On	<input type="checkbox"/> System Exclusive
<input type="checkbox"/> Aftertouch	<input type="checkbox"/> MIDI Time Code
<input type="checkbox"/> Control Change	<input type="checkbox"/> System Common
<input type="checkbox"/> Program Change	<input type="checkbox"/> System Real Time
<div>Clear</div>	
<div>Set All</div>	

Pitch Filter	Filters out any pitch or group of pitches. Click on one or more keys of the keyboard icon, or drag across them. Invert switches from filtering out selected notes to filtering out non-selected notes; Clear removes all selections.
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Pitch filter	
Note Number: 47	<div>Clear</div>
Pitch Name: B1	<div>Invert</div>
	

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Process menu (con't)

Menu item	Function
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Transpose	Transposes up or down. Enter a Transpose Amount (number of notes); or enter a number of octaves, if any, and drag "Octave(s) Plus" to the desired Transpose Interval ; or enter a Transposed Pitch . Whichever way you choose, the values in all the other fields change to reflect the selected transposition. The Direction field changes the transposition direction if necessary.
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Transpose Amount	2	steps	
Transpose Interval	0	octave(s) plus	Major 2nd
Original Pitch	C3		
Transposed Pitch	D3	Direction	Up

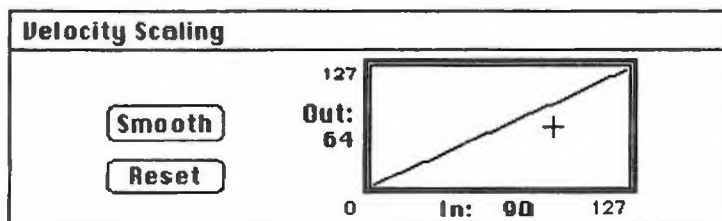
Transpose			
Transpose Amount	13		
Transpose Interval	1	octave(s) plus	Minor 2nd
Original Pitch	C3		
Transposed Pitch	C#4	Direction	

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Process menu (con't)

Menu item	Function
Velocity Scaling	Changes the velocity output in relation to velocity input. Drag the cursor to redraw the diagonal line and create a new ratio. The default diagonal line represents output velocity (y-axis) equal to input velocity (x-axis). Zero represents no attack, 127, the greatest attack speed. Out: and In: define the coordinates of the cursor position.

Whenever the redrawn curve is above the default line, the output is greater than the input; whenever the new curve is below the default line, the output is less than the input. **Reset** restores the original diagonal line; **Smooth** smooths any jagged corners of a newly drawn line.



MIDInet reference (con't)

Special

Clean Up Window
Display Preferences... %P
Set Display Defaults...

Refresh MIDInet™
All Notes Off... %A
Reset MIDInet™...

Monitor %R

External Sync ►

Special menu

Menu item	Key equivalent	Function
Clean Up Window		Not active.
Display Preferences...	%D	Customizes the MIDInet window. Select or deselect columns for input, output or Synclavier; select the desired number of process columns; and set the width of columns.
Set Display Defaults...		Replaces window defaults with the current window configuration.
Refresh MIDInet™...		Re-applies the MIDInet connections of the displayed screen and sends a Note-Off message to all connected devices.

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Special menu (con't)

Menu item	Key equivalent	Function
All Notes Off...	⌘A	Sends a Note-Off message to all connected devices.
Reset MIDInet™...		Resets MIDI hardware. Resets MIDI hardware.
Monitor	⌘R	Monitors MIDI events entering the selected block and displays them in the dialog area.
External Sync		Drag to Internal, MIDI Input, MIDI Aux, or MIDInet™ sync if desired.

Basic MIDInet techniques

For new users, the following instructions step you through a sample MIDI session to provide practice in performing some of the more common MIDI routing and processing functions.

Creating and assigning input blocks

If MIDInet is not running, start it by double clicking on the MIDInet icon in the Finder. If the screen shows another module, select MIDInet from the Window menu. When the MIDInet screen appears, the target block is in the upper left corner of the routing area under the MIDI Input heading.

1. Create an input block by pressing Return. Then create two more by moving the target block down, and pressing Return again for each new block.

2. Click on an input block to select it.

The target block surrounds the selected block, and fields for input name, port and channel appear in the dialog area.

3. Press Tab or click in each dialog field, and type in the desired name or value.

4. Press Return when through.

The information assigned is shown in the selected input block.

5. Repeat steps 2 to 4 for each input block.

A new dialog appears each time you select another block.

Creating and assigning a process block

Blocks in the process column represent a process that applies to all signals routed through that block.

1. Move the target block to the first process column and press Return.
2. Pull down the **Process** menu and select **Transpose**.

The Transpose dialog appears, and the name Transpose appears in the selected block.

3. Define a transposition in one of the following ways:

- Enter the Transpose Amount and press Return. Drag the Direction field to the desired direction, if necessary.
- Enter the number of octaves in the left Transpose Interval field, if required, and drag the right Transpose Interval field (after plus) to the desired interval. Drag the up or down switch to the desired direction if necessary.
- Enter a pitch designation in the Transposed Pitch and/or Original Pitch fields and press Return.

All signals coming through this process block will be transposed the selected amount.

Basic MIDInet techniques (con't)

Connecting blocks

You can connect all three input blocks to the process block simultaneously.

1. Select all three input blocks.
2. Select the **Connect From** command from the **Edit** menu or press **⌘F**.

The selected blocks animate.

3. Select the **Transpose** block.
4. Select the **Connect To** command from the **Edit** menu or press **⌘T**.

Lines, indicating the connections, are drawn from the source blocks to the destination block. The source blocks remain animated.

5. Select the **Connect From** command from the **Process** menu or press **⌘F** again.

Source block animation is turned off.

Routing and assigning a Synclavier block

1. Move the target block to the Process column immediately to the right of the Transpose block.
2. Drag from the right end of the target block into the Synclavier column.

A process block and a Synclavier block are created and connected. The Synclavier block is selected.

Fields for track number, track name and timbre name appear in the dialog area.

3. Press Tab or click in each dialog field and type in the desired information. The Track Number field accepts a track number, K for keyboard or S for synchronization.

Sync, Kbd or a track number and a name appear in the selected block as they are entered.

4. Select the second process block and give it one of the available processes.
5. Connect the two process blocks by dragging from the right end of the transpose block to the second process block.

Basic MIDInet techniques (con't)

Storing a selected part of the setup

Single blocks, groups of blocks with their connections; or even whole setups can be stored using the **save selection** command on the File menu. You can store your three input blocks with their names, ports and channels.

1. Select the input blocks and the transpose block by dragging over them. Shift click to add or remove blocks from the selection.
2. Select **Save Selection** from the File menu.
3. Enter a name for the file and select a folder and/or drive, if desired.*
4. Click the **Save** button.

The selected part of the set-up is saved as a MIDInet file.

* If you are unfamiliar with this procedure, see your Macintosh manual.

Merging an old file with the current file

You can place any stored file into the current file.

1. Save the current file by selecting the **Save As** command from the **File** menu. Type a filename into the **Save As** dialog and change the storage folder or device if desired.
2. Close the current file by selecting the **Close** command from the **File** menu.
3. Open a new file by selecting the **New** command from the **File** menu.
4. Select **Merge** from the **File** menu, or double-click at the desired location.

The Merge dialog appears listing the MIDInet file you saved.

5. Double click the file you just stored containing the three input blocks and the transpose block; or select it and click **Open**.

The file is placed at the target block position. You can now create a new MIDI setup.